Worksheet #25   Answers

1) $\underline{p} = \underline{\pm 1, \pm 2, \pm 4}$ The graph appears to have x-intercepts at
   $q \quad \pm 1, \pm 2, \pm 4$ $-2, -\frac{1}{2}, \frac{1}{2}$ and 2.

```
-2 | 4   0   -17   0    4          -½ | 4   0   -17   0    4
   |    -8    16   2   -4             |    -2    1    8   -4
     4  -8    -1   2 | 0  ✓            4  -2   -16   8 | 0  ✓
```

```
 ½ | 4   0   -17   0    4           2 | 4   0   -17   0    4
   |     2    1   -8   -4             |     8   16   -2   -4
     4   2   -16  -8 | 0  ✓            4   8   -1   -2 | 0  ✓
```

2) $\underline{p} = \underline{\hspace{1.5cm} \pm 1, \pm 3 \hspace{1.5cm}}$ The graph appears to have x-intercepts
   $q \quad \pm 1, \pm 2, \pm 4, \pm 8, \pm 16, \pm 32$ at 1 for certain but also possibly at -
                                                          1/8 and $\frac{3}{4}$.

```
 1 | 32   -52   17    3        -1/8 | 32   -52   17    3
   |       32  -20   -3             |       -4    7   -3
     32   -20   -3 | 0  ✓            32   -56   24 | 0  ✓
```

```
 ¾ | 32   -52   17    3
   |       24  -21   -3
     32   -28   -4 | 0  ✓
```

3) $\underline{p} = \underline{\pm 1, \pm 2, \pm 4, \pm 8}$ There are several x-intercepts; however, based on
   $q \quad \pm 1, \pm 2, \pm 3, \pm 6$ the values we see and their positions there are
                                           two possibilities (the negative one does not fall
                                           correctly). They are 2/3 and 1

```
2/3 | 6   -1   -13     8         1 | 6   -1   -13    8
    |      4    2   -22/3            |      6    5   -8
      6    3   -11 | 2/3             6    5   -8 | 0  ✓
```

4) $\underline{p} = \underline{\pm 1, \pm 2, \pm 3, \pm 6, \pm 9, \pm 18}$ The graph indicates three possible roots
   $q \quad \pm 1, \pm 2, \pm 4$ at -2, -3/2 and 3/2.

```
-2 | 4   7   -11   -18         -3/2 | 4   7   -11    -18
   |     -8    2    18              |    -6  -3/2   75/4
     4  -1    -9 | 0  ✓              4   1  -25/2 | 3/4
```

```
3/2 | 4    7    -11    -18
    |      6   39/2   51/2
      4   13   17/2 | -21/2
```

5) $g(-x) = -2x\sqrt{x^4 - 9}$ odd
6) $g(-x) = 3\cos(-x + \pi/2)$ odd
7) $g(-x) = |x + 3|$ neither
8) $g(-x) = -3x^6 + 7x^2 - 9$ even
9) $g(-x) = 7^{-x}$ neither
10) $g(-x) = -17x^3 - 6x$ odd